CLAIMS

What is claimed is:

1. An ink-jet printhead comprising:

a substrate in which a manifold supplying ink is formed;

a nozzle plate which is formed to be spaced-apart from the substrate by a predetermined gap and in which a nozzle through which ink is ejected is formed;

a barrier wall which seals a space formed between the substrate and the nozzle plate and defines an ink chamber filled with the ink to be ejected, an ink channel connected to the ink chamber, and an ink feed hole connecting the ink channel to the manifold; and

an insulating layer which is formed on the substrate and forms lower walls of the ink chamber, the ink channel, and the ink feed hole, where a heater generating bubbles by heating the ink filled in the ink chamber is formed on the lower walls of the ink chamber;

wherein the ink feed hole includes a plurality of through holes which perforate the insulating layer and through which the ink channel is connected to the manifold, and a plurality of posts which are formed on the insulating layer and support the nozzle plate.

2. The printhead of claim 1, wherein the through hole has the same depth as the insulating layer.

3. The printhead of claim 1, wherein the through hole is formed to be deeper than the insulating layer in a direction parallel to an ink ejection direction by etching the insulating layer and the surface of the substrate.

4. The printhead of claim 1, wherein the barrier wall is formed of polyimide.

5. The printhead of claim 1, wherein the posts are formed of polyimide.

6. A method of manufacturing an ink-jet printhead, the method comprising:

forming an insulating layer on a surface of a substrate and forming a heater on the insulating layer;

forming a plurality of grooves having a predetermined depth in the insulating layer;

forming a barrier wall which defines an ink chamber, an ink channel, and an ink feed hole, and a plurality of posts on the insulating layer in which the grooves are formed;

coating a predetermined material on the insulating layer on which the barrier wall and the posts are formed and plaining top surfaces of the barrier wall and the posts;

forming a nozzle plate on the top surfaces of the barrier wall and the posts;

forming a nozzle through which the predetermined material is exposed in the nozzle plate;

forming a manifold through which the predetermined material filled in the grooves is exposed by etching a lower surface of the substrate; and

forming the ink chamber, the ink channel, and the ink feed hole by removing the predetermined material exposed through the nozzle and the manifold.

7. The method of claim 6, wherein the forming of the barrier wall comprises:

forming a predetermined material layer on the insulating layer; and

patterning the material layer and forming the barrier wall and the posts.

8. The method of claim 7, wherein the material layer is formed of polyimide.

9. An ink-jet printhead comprising:

a substrate having a manifold supplying ink;

a nozzle plate having a nozzle;

a barrier wall formed between the substrate and the nozzle plate to form an ink chamber communicating with the manifold and the nozzle; and

a plurality of posts disposed in the ink chamber, formed between the substrate and the nozzle plate, and spaced-apart from each other to support the nozzle plate with respect to the substrate.

10. The printhead of claim 9, wherein the substrate comprises:

a plurality of through holes formed on the substrate to guide ink to flow from the manifold to the ink chamber.

11. The printhead of claim 10, wherein the through holes are disposed between the posts.

12. The printhead of claim 11, wherein the through holes are spaced-apart from each other.

13. The printhead of claim 19, wherein the posts have the same height as the barrier wall.

14. The printhead of claim 9, wherein the ink chamber comprises a first portion corresponding to the nozzle and a second portion corresponding the manifold, and the posts are disposed in the second portion of the ink chamber.

15. The printhead of claim 9, wherein the posts are disposed in a direction parallel to an ink ejection direction.

16. The printhead of claim 9, wherein the posts are spaced apart from each other in a direction perpendicular to an ink ejection direction.

17. An ink-jet printhead comprising:

a substrate having a manifold supplying ink;

a nozzle plate having a nozzle;

a barrier wall formed between the substrate and the nozzle plate to form an ink chamber and an ink feed hole portion communicating with corresponding ones of the nozzle and the manifold; and

a plurality of posts disposed in the ink chamber, formed between the substrate and the nozzle plate, and spaced-apart from the barrier wall to support the nozzle plate with respect to the substrate.

18. The printhead of claim 17, wherein the barrier wall forms an ink channel between the ink feed hole portion and the ink chamber.

19. The printhead of claim 18, wherein the posts are not disposed in the ink channel and the ink chamber.